

(*Bull. Brit. Orn. Cl.* 1976: 57-58); Penry (*ibid.* 1977: 120-121); Ebenhard (*ibid.* 1979: 39-40); Feare (*ibid.* 1979: 75-77); Feare & High (*Ibis* 1977: 323-338). Feare (*Ibis* 1974: 543-545) has discussed mangrove utilization. For 40 years there has been concern that the farming of the eggs of the tern *Sterna fuscata*, collected and sold commercially on Mahé, was being carried to excess. In fact the largest source of supply is not in the Seychelles proper (where the largest colonies are on Bird Island and Aride, now protected by the owners), but on Desneufs in the Amirantes. The problem has been lately thoroughly studied by Feare (most recently *Biol. Cons.* 10, 1976: 169-181). Various other terns, as well as 2 *Puffinus* spp. and *Phaethon lepturus*, breed in the Seychelles. On the other hand *Sula dactylatra* and *S. leucogaster*, which formerly bred on Bird Island, no longer do so. Sadly, this is merely part of a general decline amongst the boobies in the western Indian Ocean (Feare, *Biol. Cons.* 14, 1978: 295-305). For certain misconceptions about sea birds in Penny's book (particularly the occurrence of *Sterna balaenarum*), see Feare & Bourne (*Ostrich* 1978: 64-66). Due for publication in 1980, Stoddart (Ed.) (*Biogeography and Ecology of the Seychelles Islands*) will contain papers on both land and sea birds.

### *Chagos Archipelago*

The birds of these islands have been discussed by Bourne (*Atoll Res. Bull.* 149, 1971: 175-207). Sea birds predominate, and discounting *Butorides striatus* there is no land bird which might not have been man-introduced. Hutson (*ibid.* 175, 1975) records observations confined to Diego Garcia.

The pelagic distribution of sea birds in the western Indian Ocean has been studied by Bailey (*Ibis* 1968: 493-519), from his observations during the International Indian Ocean Expedition on board the "Discovery" in 1963 and 1964. Covering the same area, this author (*J. Marine Biol. Assoc. India* 14(2), 1972: 628-642) has discussed their breeding seasons, species composition, density at sea and migrations.

One may conclude by stressing the increasing activity in the Malagasy Region since the turn of the century. The following figures of publications relevant are some index: 1900-29, 64; 1930-39, 60; 1940-49, 30; 1950-59, 60; 1960-69, 97; 1970-79, 169. The low figure for 1940-49 is largely attributable to World War II.

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## Indian Ornithology: The Current Trends

by *Salim Ali*

A general interest in birds as pets or for sport was inherent in mediaeval India, though by and large perhaps as rather an elitist activity. Some of the noblemen of the Moghul court and the emperors themselves, particularly Babur the founder of the dynasty, and his great grandson Jahangir, were accomplished naturalists as their own memoirs and contemporary records of

European travellers abundantly show. Many of Jahangir's observations are so scientifically accurate that they might have been made by a discerning birdwatcher today. But ornithology as currently understood really began and developed as a scientific discipline during the British connection. Despite some sporadic collecting of skins by early European travellers and servants of the East India Company in various parts of the country, and publication of their reports in the *Journal of the Asiatic Society of Bengal*, *Proceedings of the Zoological Society of London*, and elsewhere, Indian ornithology really started with the advent in 1864 of the 2 volumes of *Birds of India* by T. C. Jerdon, a surgeon in the Madras Army of the E.I.C., which epitomized all the knowledge up to that period. Most of the basic information on Indian birds that we possess has accrued between that period and the turn of the century, predominantly through the monumental labours in field and museum of such outstanding naturalists as Edward Blyth, Brian Houghton Hodgson, and Allan Octavian Hume. In my estimation the most remarkable among these three was Hume, both for his humanity and as a savant of ornithology. While still an active Civil Servant he found time from his multifarious official duties and preoccupations to amass a gargantuan collection of some 60,000 bird skins from far flung corners of the subcontinent, aided in part by the wide network of protégés he had built up through voluminous correspondence, advice and guidance. Over and above all this Hume found the time to edit his journal of Indian ornithology bearing the somewhat eccentric title of *Stray Feathers*. The 11 volumes of this publication which appeared between 1873 and 1888, before it closed down, are a veritable gold mine for the ornithologist, and indispensable for every serious student of Indian birds. When *Stray Feathers* ceased publication many of its former contributors diverted their writings to *The Ibis* and to the *Journal of the Bombay Natural History Society* (JBNHS) which had made its debut in 1886. The latter is now in its 75th volume and has become increasingly important in disseminating knowledge about Indian birds.

Indian ornithology received its second definitive boost after Jerdon with the publication, between 1889 and 1898, of the 4 volumes on birds by E. W. Oates and W. T. Blanford in the *Fauna of British India* series sponsored by the Secretary of State for India. Like its predecessor it brought together and updated all the advances in knowledge resulting from the extensive explorations in the field and taxonomic research in the museum during the intervening 27 years. This renewed fillip was clearly responsible for producing the rash of outstanding field ornithologists that distinguished the next 33 years up to the publication of volume 1 of the second edition of the *Fauna of British India* series on birds – the *New Fauna* for short – by E. C. Stuart Baker, himself an illustrious product of that period. The 6 main volumes of the *New Fauna* were completed in 1930. They in turn showed up many lacunae in our knowledge, especially concerning areas in the subcontinent which had been imperfectly explored or not at all: areas such as the Eastern Ghats and the territories of many of the princely states like Hyderabad and Gwalior, in the centre of the Peninsula, Mysore, Travancore and Cochin in the south, Baroda, Kutch and the Kathiawar states in the west, Jodhpur and Bahawalpur in Rajasthan, and smaller states in Orissa and elsewhere which together constituted a very considerable part of the British Indian Empire.

Precise knowledge of the spatial distribution of even the commoner birds

within the subcontinent was lacking. This knowledge had become crucial in view of the concept of subspecies, which had been introduced by Stuart Baker himself for the first time in Indian ornithology. In fact one of the main criticisms of the *New Fauna* was that the author had assigned subspecies arbitrarily to areas whence adequate material was unavailable in museums for a comparative study. To rectify this deficiency the Bombay Natural History Society, at the instigation of Hugh Whistler, one of the most active British workers on Indian birds at the time, and with the financial generosity of Mr Arthur S. Vernay, an American business magnate, organized an ornithological field survey of the Eastern Ghats. The survey collections, meticulously studied and reported on by Whistler and Kinnear (later Sir Norman) with the collaboration of Dr C. B. Ticehurst in the *Journal of the Bombay Natural History Society* (1930-37), showed up convincingly the importance of this type of exploration and further highlighted the remaining and additional lacunae. Thus followed a series of similar bird surveys – organized by the Bombay Natural History Society and funded chiefly by the States concerned, which by the next 20 years had covered practically all the unworked areas of the subcontinent, furnishing a more comprehensive picture of the avifauna.

Up to the time of the First World War (1914) practically all the work on Indian birds had been done by Britishers, chiefly colonial civil and military officials, indigo and coffee planters and the like. Names of the more prominent among these are chronicled in the Introduction to Vol. 1 of *Handbook of the Birds of India and Pakistan* (S. Ali & S. Dillon Ripley 1969). Between the First World War and the Second (1939) most ornithologists' names are still British, though a falling off of interest in Indian birds in favour of Africa is already perceptible. With the deaths of Dr. C. B. Ticehurst in 1941 and his close friend and collaborator H. Whistler in 1943 – two of the last and most outstanding contributors to Indian bird lore – the British era of Indian ornithology virtually came to an end. Also discernible during this period is the emergence of first a few sporadic, and then an increasing number of Indian names among the ornithological contributors to the *Journal of the Bombay Natural History Society*. In the pre-Independence period, i.e. between the end of World War II and 1947, the focus of British ornithological interest had shifted more or less completely to Africa. The only foreigner who has contributed steadily and substantially since that time is my colleague and co-author, the American Dr. S. Dillon Ripley. The trend since then has been mainly towards a more intensive exploration of unworked areas, and field studies of individual species, as well as of such problems as Migration through large scale bird ringing, and other problems of an ecological nature. Most of the taxonomical work involved has also been done by Indian ornithologists, with the noted exception of Dr. Ripley, who has been active both in the museum and the field since the last War, and whose *Synopsis of the Birds of India and Pakistan*, 1961 (2nd edition in preparation) is a basic and definitive contribution. *Synopsis* forms the taxonomical basis of the *Handbook of the Birds of India and Pakistan* by Sálím Ali & S. Dillon Ripley, published by Oxford University Press between 1968 and 1974. This comprehensive manual is the 'spiritual' successor to the *New Fauna* and embodies within its 10 volumes all the additions and corrections accrued during the 30 years since Stuart Baker's last volume. By updating available information, laying special emphasis on ecology, and providing

identification keys and colour illustrations for most of the 1200 odd species (plus subspecies) that it describes, the *Handbook* purports to serve the museum scientist as well as the serious birdwatcher.

Birdwatching as a hobby has never enjoyed much popularity among Indians. Religious sentiment against taking life has inhibited the juvenile collection of bird skins and eggs as has been so popular among schoolboys in the West. This, combined with the lack of encouragement in the home and of inspiring nature study instruction in school, where most teachers are themselves ignorant in bird lore, has tended to dampen the spirit of enquiry in Indian children. Another serious impediment was that until quite recently illustrated bird books were virtually non-existent, thus discouraging even self-teaching. Whistler's *Popular Handbook of Indian Birds* which first appeared in 1928, followed by further editions in 1935 and 1941, was perhaps the greatest influence in awakening an interest in birds among the Indian public, despite the fact that it contains so few colour illustrations. For a beginner, colour illustrations are indispensable. I vividly recall my own difficulties as a struggling novice 70 years ago without such aid. A further 'leap forward' in popular interest in birds came after the publication by the Bombay Natural History Society of Sálím Ali's *The Book of Indian Birds* in 1941, which carried coloured illustrations of all the 181 commoner Indian species that it described. Popular interest has increased and multiplied with each successive edition of *The Book*, so that it is now encouragingly widespread and growing, particularly among the middle class young. The eleventh edition contains colour pictures and descriptions of 296 species found in the plains and hills of peninsular India, south of the Himalayas.

Fortunately for Indian students the foundation for study of properly classified reference material is available in the comprehensive collections of the Zoological Survey of India, Calcutta, and the Bombay Natural History Society. Further *ad hoc* specimen collection is now unnecessary except in a few remote and unexplored pockets of the country and of rare and little known forms. There would seem to be comparatively little scope for further taxonomical work on Indian birds, for which, in any case, the major foreign museums are perhaps better equipped. Happily the emphasis has now turned to ecology and ethology, breeding biology, population dynamics, conservation, and studies that have essentially to do with the living bird. The economic importance of birds in a country so largely dependent on agriculture and forestry is just beginning to be adequately appreciated, and centres for research in economic ornithology have been set up in some of the recently started agricultural universities. The Bombay Natural History Society, with its exceptional facilities in the way of its bird collection and ornithological library, is recognized by the University of Bombay as a guiding institution for postgraduate research in field ornithology, and some highly commendable research projects have been completed by its students. It is hoped that more and more competent teachers will thus become available for conducting ornithological courses in our schools and colleges, and for providing trained personnel for our expanding Nature Conservation and Wildlife Management programmes.

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